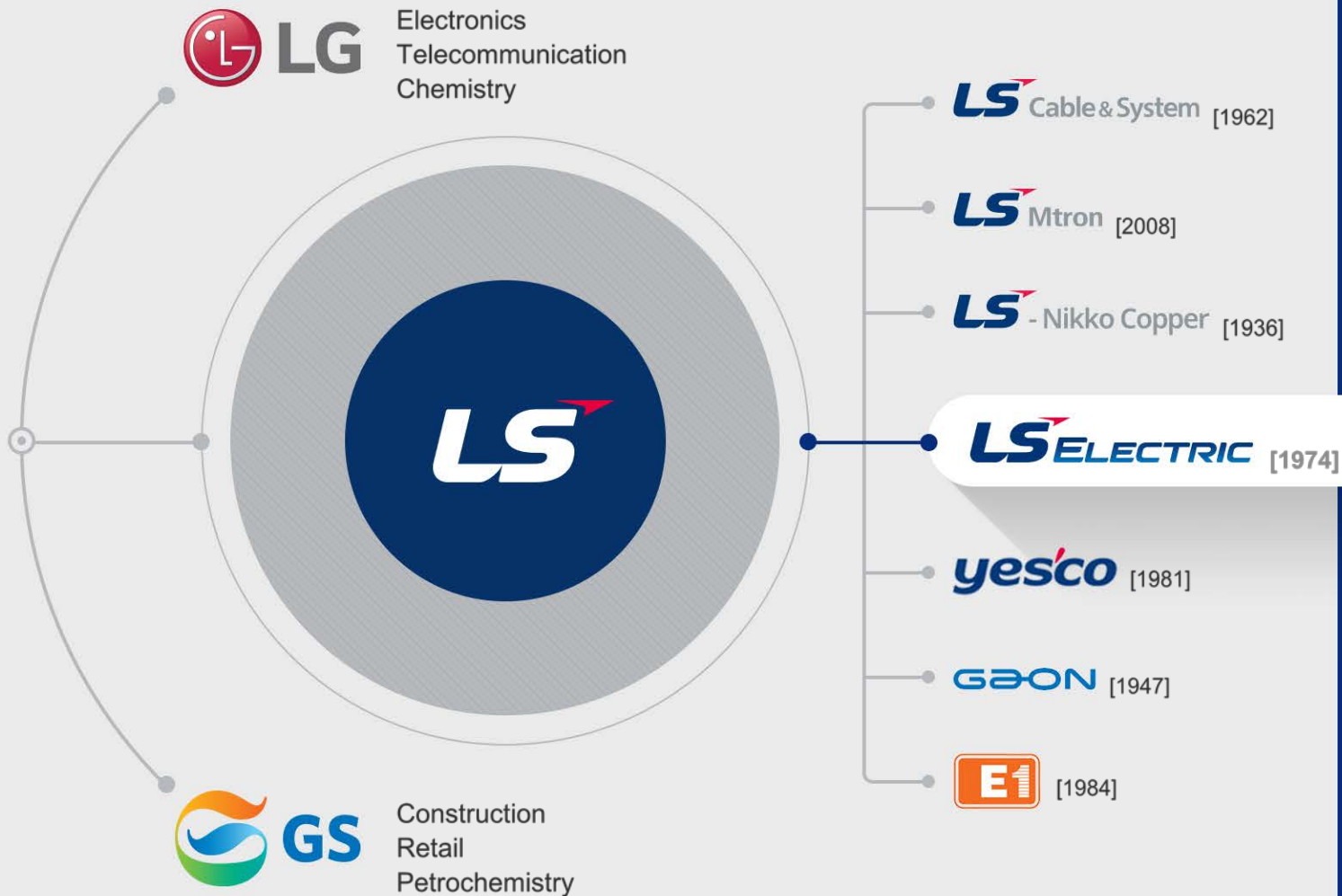




LSLV Drive Series



LS Group is a conglomerate based in South Korea. It spun off from LG Group in 2003.
LS is leading in the field of electric power, automation, machinery, materials and energy.



LS Group

EMPLOYEES	13,000
AFFILIATES	53
SALES	22.9 B USD
TOTAL ASSET	23.7 B USD

EMPLOYEES	3,500
SALES	1.9 B USD
OPERATION INCOME	150 M USD

* 2019년말 기준



Overseas Subsidiaries

Chicago(USA), Hanoi(Vietnam),
Wuxi/Shanghai(China),
Amsterdam(Netherland), Ankara(Turkey)

Overseas Branches

Moscow(Russia), Bangkok(Thailand), Jakarta(Indonesia)
Shanghai/Beijing/Guangzhou/Qingdao/Chengdu(China), Verona(Italy)

Global Presence

92 Countries

LS ELECTRIC is the pioneer of automation, electric power system, and green energy industry in South Korea.

Company Name	LS ELECTRIC CO., LTD.
Founded	1974
Employees	More than 3,500
Total Assets	USD 2,500 Million (2022)
Headquarters	LS Tower, LS-ro 127, Dongan-gu, Anyang-si, Gyeonggi-do, Korea
Seoul office	LS Yongsan Tower, Hangang-daero 92, Yongsan-gu, Seoul, Korea
Plants	4 in Korea, 2 in China and 1 in Vietnam

Global Manufacturing Footprint

Global manufacturing footprints and top-notch R&D centers allow LS ELECTRIC to produce global top level products with unparalleled cost competitiveness

R&D center

- ⌚ Automation R&D Center
- ⌚ Electro Technology R&D Center
- ⌚ Convergence Technology R&D Center
- ⌚ Power Testing & Technology Institute

Dalian factory, China



Wuxi factory, China



Cheong-ju factory, Korea



Busan factory, Korea



Busan HVDC factory, Korea



Cheon-an factory, Korea



Hanoi factory, Vietnam

Automation Solution



Automation Solution

Devices

Overview of automation products

PLC

Specification

	Large • Medium		Small • Micro		
	Redundancy system	High performance	Compact	Slim	Distributed I/O
Product	 XGRXGI		 XEC	 XEM-H	 Smart I/O
Spec	- Processing speed: 42ns/step - I/O Device point: 131,072 - IEC 61131-3 standard language - Switching over time: 4.3 ~ 22 ms	- Processing speed: 8.5ns ~ 6.4ns/step - I/O Device point: 131,072 - Dedicated/IEC 61131-3 standard language	- Processing speed: 60ns/step - I/O point: 352 - SD card (logging) - Dual Port Ethernet - IEC 61131-3 Standard language	- Processing speed: 40ns/step - I/O point: 256 6 axis Servo Control (Pulse) - IEC 61131-3 Standard language	- Block type: 32 - Expansion type: 256 - RAPIDnet+ (EtherNet/IP, RAPIDnet, Modbus TCP/IP), EtherCAT - Profibus-DP, Rnet, DeviceNet, Modbus
Application	Process Automation - Water&Wastewater treatment - Power plant - Chemical plant - Oil & Gas, etc.	Factory Automation - Semiconductor - Secondary battery - Display, Home appliance - Automobile - Packaging, logistics	Machine - Press machine - Packaging machine - Refrigeration machine, etc.	Machine - Press machine - Packaging machine - Refrigeration machine, etc.	Distributed control (remote control) - Semiconductor - Secondary battery - Display, home appliance - Automobile, logistics, etc..

Automation Solution

Devices

Overview of automation products

HMI

Specification

iXP3 Series	LXP Designer	15" (38Cm)	12.1" (31Cm)	10.4" (26Cm)
	Standard, Linux  Cyber Security  IP Camera  Serial (FIS4248S)  Ethernet I/F  Serial (FIS-323C)  HDMI I/F  USB port  USB I/F  SD Card I/F	iXP3-1500A/D  TFT Color LCD 24bit (16.7M) XGA(1024×768)	iXP3-1200A/D  TFT Color LCD 24bit (16.7M) XGA(1024×768)	iXP3-1000A/D  TFT Color LCD 24bit (16.7M) XGA(1024×768)
LXP Series	LXP Designer	24" (61Cm)	19" (48.3Cm)	12" (31Cm)
	Premium, Linux  Built-in camera  Cyber Security  IP Camera  SD Card I/F  USB port  USB I/F  Ethernet I/F  Serial I/F (FIS-232C/FIS4248S)  HDMI I/F	LXP-D2411/LXP-T241  TFT Color LCD 24bit (16.7M) FHD (1920X1080)	LXP-D1911/LXP-T1911  TFT Color LCD 24bit (16.7M) SXGA (1280×1024)	LXP-D12□□  TFT Color LCD 24bit (16.7M) XGA (1024×768)
iXP2 Series	XP Builder	15" (38Cm)	12.1" (31Cm)	10.4" (26Cm)
	Standard, WinCE  Ethernet port  Ethernet I/F  USB port  USB I/F  SD Card I/F  HDMI I/F	iXP2-1500A/D  TFT Color LCD 24bit (16.7M) XGA(1024×768)	iXP2-1200A/D  TFT Color LCD 24bit (16.7M) XGA(1024×768)	iXP2-1000A/D  TFT Color LCD 24bit (16.7M) XGA(1024×768)
eXP2 Series	XP Builder	10.2" (25.9Cm)	7" (17.7Cm)	5.6" (14.2Cm)
	Entry  Serial (FIS-232C)  Serial I/F (FIS4248S)  Serial I/F (FIS-48S)  USB port  USB I/F  Ethernet I/F  SD Card I/F	eXP2-100□  TFT 16.7M Colors WSVGA(1024 X 600)	eXP2-070□  TFT 65,536 Colors WVGA(800×480)	eXP2-050□  TFT 65,536 Colors VGA(680×480)

Automation Solution

Devices

Overview of automation products

GMC (General Motion Controller)

Specification

GMC

Motion Controller

Drive & I/O

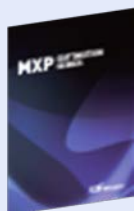
Motor & Gearbox



Product



XMC-E08A/EI6A/E32A/E32C



MXP 3.0



L7P/L7C
(Pulse Type Drive)



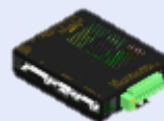
Pegasus
(All in One servo)



L7NH
(Network type Drive)



EtherCAT I/O
Expansion



DC Servo



Gearbox
(Helical gear)



Rotary Motor
(BiSS-C/Quad. Enc.)



DD Motor
(BiSS-B Enc.)



3rd Party Motor
(EnDat2.2/Tamagawa/Sinusoidal)



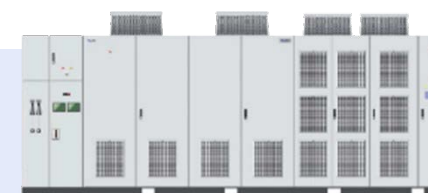
Application

Robotics, Conveyor Belts, Printing, Machine Tool, Packaging, Metal Cutting & Metal Forming Machines, Woodworking/CNC, Textiles, Printing Presses/Printers, Automatic Door Openers

Automation Solution
Devices

Overview of automation products

Drive
Specification
LV Drive
MV Drive
Compact
Standard
Premium

Product

Spec
G100

- ▶ 3 Phase 200V 0.4~22kw
- ▶ 3 Phase 400V 0.4~22kw

M100

- ▶ 1 Phase 200V 0.1kw~2.2kw

S100

- ▶ 1 Phase 200V 0.4kw~2.2kw
- ▶ 3 Phase 200V 0.4kw~15kw
- ▶ 3 Phase 400V 0.4kw~75kw

H100

- ▶ 3 Phase 240V 7.5~30hp
- ▶ 3 Phase 480V 7.5~700hp

S300

- ▶ 3 Phase 200V 2.2kw~45kw
- ▶ 3 Phase 400V 0.4kw~220kw

iS7

- ▶ 3 Phase 200V 0.75kw~75kw
- ▶ 3 Phase 400V 0.75kw~375kw

L100

- ▶ 3 Phase 400V 5.5kw~22kw

LSMV Drive

- ▶ 3kV : 200~3,700kVA
- ▶ 4kV : 250~4,700kVA
- ▶ 6kV : 400~7,500kVA
- ▶ 10kV : 600~11,000kVA
- ▶ 11kV : 660~12,500kVA


Application

Centrifugal Separator,
Packing Processing
Machine, Elevator Door,
Industrial Washing Machine,
Knitting Machine

Hoist (traction), Metal,
Ejector, Stirring, Extruder,
Conveyor, Compressor,
Fan, Pump, Parking Facility

Paper, Steel, Crane
(traction), Elevator,
Press, Parking Facility
(tower), Machine Tools

Fan, Pump, Blower

Automation Solution

From production facility to information system, LS ELECTRIC is creating core automation solutions. We are not only providing integrated solutions for factory and process automation, but also support various communication protocols to create optimal system integration.

- RAPIEnet + (Hybrid network supporting RAPIEnet, Ethernet/IP and Modbus TCP/IP)
- PROFIBUS, DeviceNet, BACnet, EtherCAT, EtherNet/IP
- CANopen, Cnet, etc.





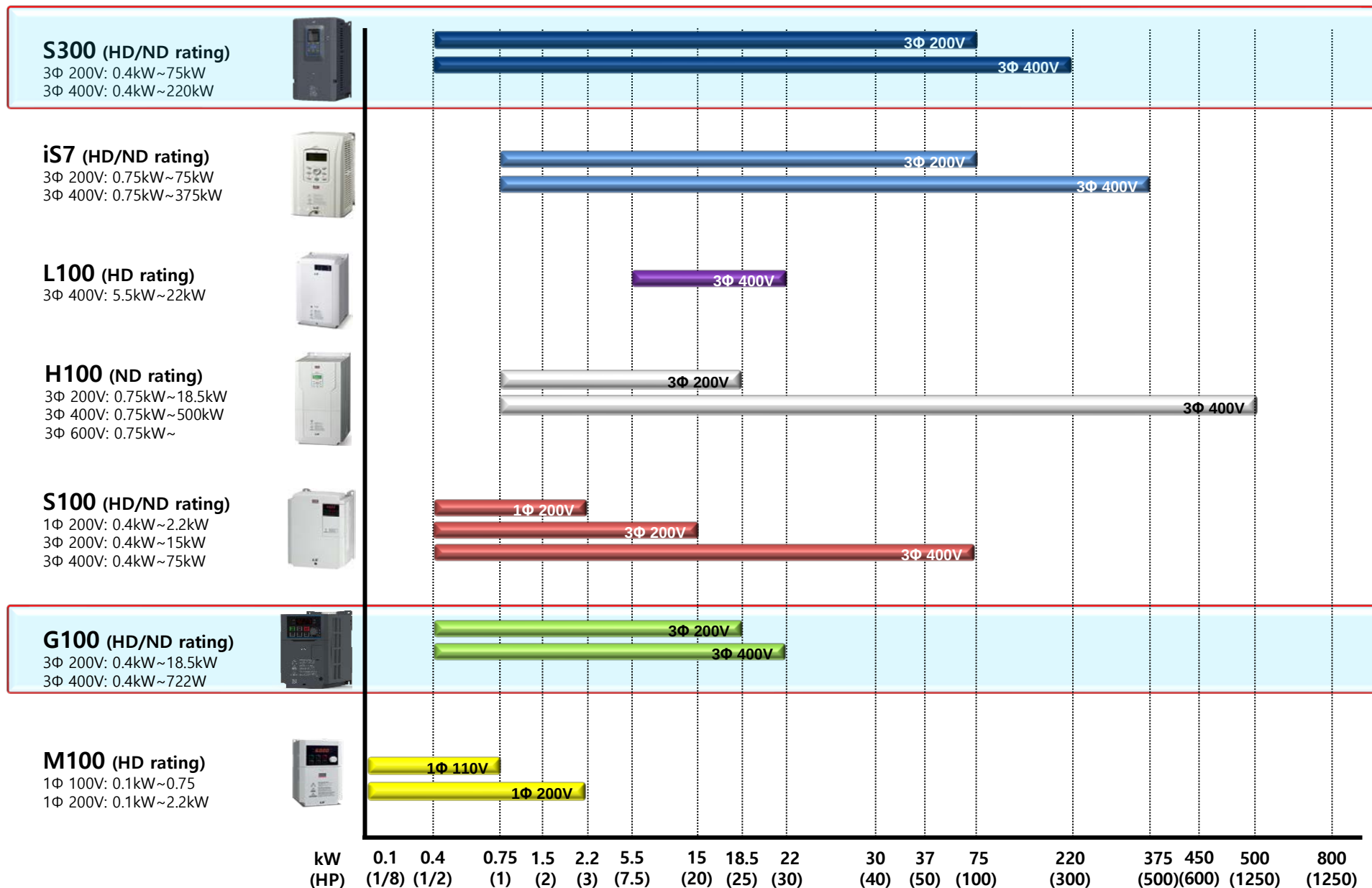
LS Drive Family

Automation Solution



LSLV AC Drives

LS Drive Line-up



M100 Series

Single Phase Compact Drive

Capacity Range

- 1-phase 100~120V 0.2~0.75kW (1/4~1HP)
- 1-phase 200~240V 0.1~2.2kW (1/8~3HP)

Product Features

- V/F, Simple Sensorless, Slip Compensation
- Built-in C2 EMC Filter
- Built-in Potentiometer
- Din-rail mount
- Built-in Dynamic Braking Unit $\geq 1.5\text{kW}$
- Standard / Advanced type
- RS-485 (Modbus-RTU)
- Side-by-side installation
- Manual / Auto Torque Boost (3 modes)
- Simple Parameter Group
- Programmable PI Control
- 2nd Motor Control

Output Ratings

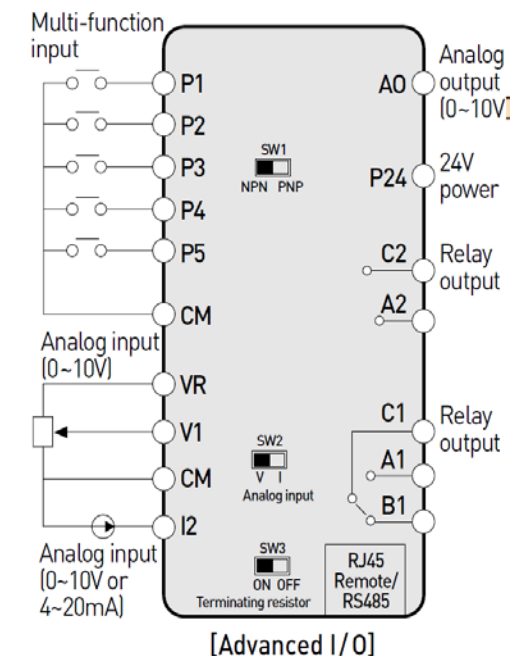
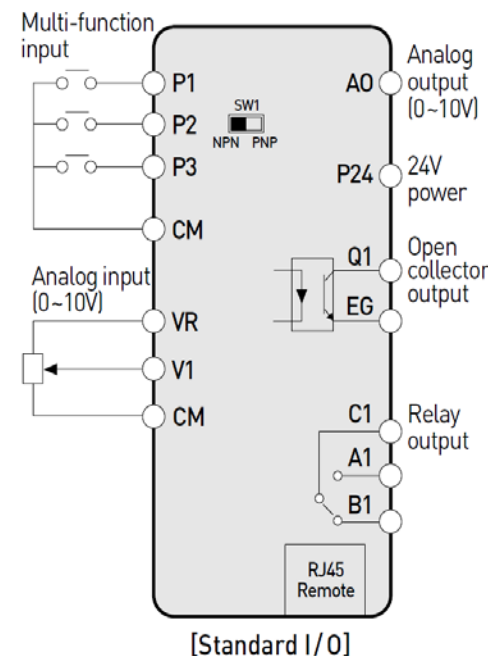
- HD 150% of Rated Current/1min
- 0.01 to 400Hz output frequency
- 1 to 15 kHz switching frequency

Options

- Remote Keypad
- Top Cover



Wirings

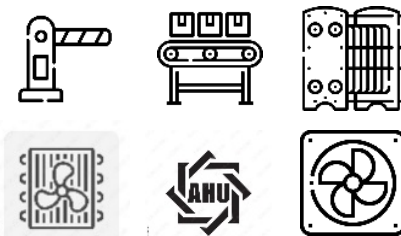


M100 Series

Applications

Applications

- Running Machine
- Small Conveyors
- Small Home Lift
- Door Control Machine
- Packaging Machine
- HVAC/R System (Heat-exchangers)



Certification



[Introduction Video Clip]



Con Door Solution



[DALMATIC V7E SR M100 INVERTER]

[CLICK TO WATCH VIDEO](#)

VTS is part of the FIFA World Cup 2018 !

VTS



FIFA WORLD CUP
RUSSIA 2018



Otkritie Arena
Kazan Arena
Novokrestovskaya Subway
St.Petersburg Ticket Center



Thumama Stadium



Thumama Stadium



Al Thumama Stadium

VTS GROUP AIR HANDLING UNITS ON 2022 FIFA WORLD CUP STADIUM

G100 Series

General Compact Drive

Capacity Range

- 3-phase 200~240V 0.4~22kW (1/2~30HP)
- 3-phase 380~480V 0.4~22kW (1/2~30HP)

Product Features

- V/F, Slip Compensation, Sensorless Vector
- STO: Safety Torque Off for G100T version
- Built-in C3 EMC Filter, except G100(C)
- Built-in Potentiometer
- Din-rail mount
- Built-in Dynamic Braking Unit
- MIL217Plus Based Design
(MIL-HDBK-217F / RIAC HDBK 217Plus Standard)
- RS-485 (Modbus-RTU)
- Side-by-side installation
- Manual / Auto Torque Boost (3 modes)
- Flying Start & KEB function
- Up/Down Control, Dwell operation
- Brake Control
- Fire Mode
- User-sequence (18 steps, G100T version)

Output Ratings

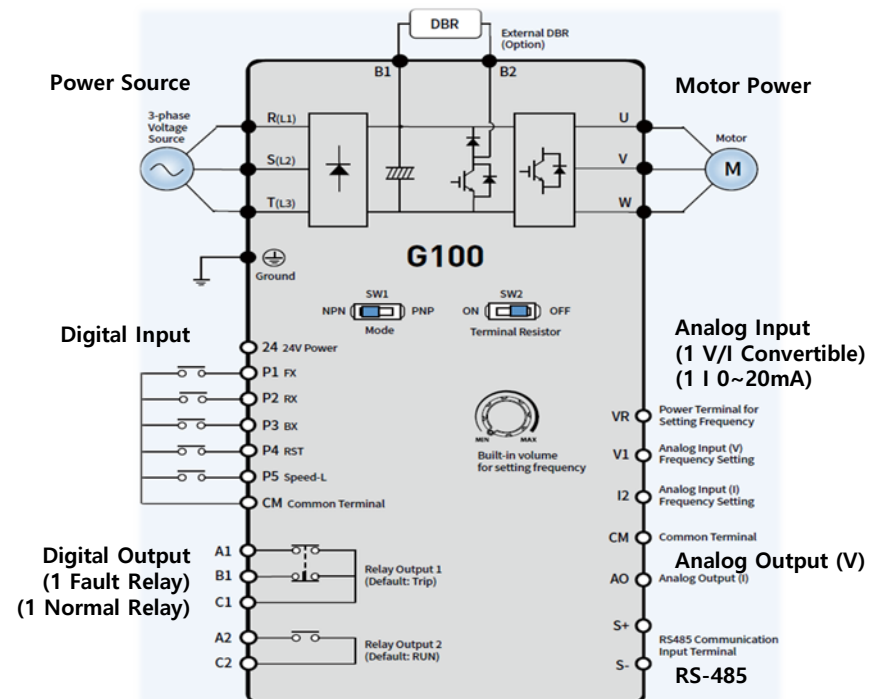
- HD 150% of Rated Current/1min
- ND 120% of Rated Current/1min

Options

- Remote Keypad
- Profibus-DP / CANopen
- All in one module
 - RAPIEnet+
 - Ethernet/IP
 - Modbus-TCP



Wirings

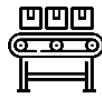
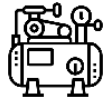


G100 Series

Applications

Applications

- Industrial Conveyors
- Blowers & Compressors
- Small Lifts
- Overhead Hoist Cranes
- Air Handling Units
- Industrial Washing Machine



Certification



DM Textile Machine



VTS Air Handling Unit

Customized OS

- PID control for Chillers
- PM motor control for AHU
- BLDC motor control for Fans
- Vacuum pump control
- Functions for CNC Machines
- High speed running machines
- Saw wire winding machines
- Warp Knitting machine
- Customized fire mode control for AHU



DS CNC Machine



GI-Vacuum Pump

S100 Series

Standard Drive

Capacity Range

- 1-phase 200~240V 0.4~2.2kW (1/2~3HP)
- 3-phase 200~240V 0.4~15kW (1/2~20HP)
- 3-phase 380~480V 0.4~75kW (1/2~100HP)

Product Features

- V/F, Slip Compensation, Sensorless Vector
- Built-in C3 EMC Filter
- Built-in Dynamic Braking Unit
- RS-485 (Modbus-RTU / LS BUS)
- Side-by-side installation
- IP66(NEMA 4X) Model Available
- STO: Safety Torque Off (3A/3B/3C)
- Pulse Train Input/Output (32kHz)
- PM Motor Control (Scalar / SL Vector)
- Flying Start & KEB function
- Up/Down Control, Dwell operation
- External Brake Control
- User-sequence (18 steps)
- Fire Mode

Output Ratings

- HD 150% of Rated Current/1min
- ND 120% of Rated Current/1min

Options

- Flange option
- Extension IO module
- Conduit kit (UL Open)
- Fieldbus
 - RAPIenet+, Ethernet/IP, Modbus-TCP, Profibus-DP
 - EtherCAT, PROFINet, CANopen



Wirings

1. 0.4kW ~ 22kW (Standard I/O)



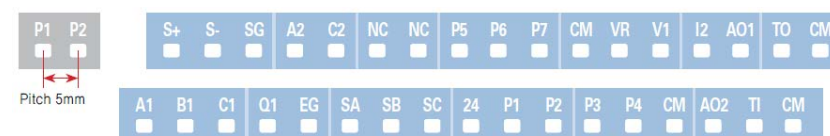
※ 23pin (5mm pitch, 3step configuration)

2. 0.4kW ~ 22kW (Multiple I/O)



※ 27pin (3.5mm pitch, 3step configuration)

3. 30kW ~ 75kW (Standard I/O)



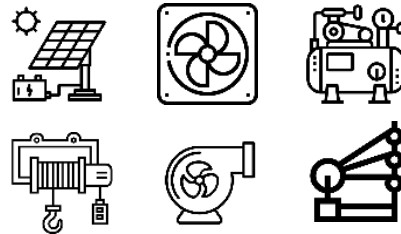
※ 34pin (5mm pitch, 2step configuration)

S100 Series

Applications

Applications

- Air Compressors
- Hoist Cranes
- Conveyors
- Vacuum Pumps
- Tenter Machines
- Industrial Washing Machines
- Elevator lifts
- Winders



Certification



HBM 250 S-W



HBM 575 S-W

Industrial Washing Machines

Customized OS

- Winder function for Steel cords
- Functions for Solar Pumps
- Functions for Chain Hoists
- Functions for Vacuum Pumps
- Functions for Textile machine
- Functions for Irrigation pumps
- Open-loop control for Lifts
- Fire mode for AHU


LoT Vacuum Pumps

Solar Pumps

KT Chain Hoists

H100 Series

Specification

Capacity Range

- 3phase 200~240V 0.75~18.5kW (1/2~20HP)
- 3phase 380~480V 0.75~500kW (1/2~800HP)

Product Features

- V/F, Slip Compensation
- Built-in C3 EMC Filter
- Built-in Dynamic Braking Unit
- Built-in RS-485 module
Modbus-RTU, LS BUS, BACnet-MSTP, Metasys-N2
- Side-by-side installation
- SP100 Bypass Panel as optional
- Pulse Train Input/Output (32kHz)
- Master-follower / Lead-leg (option)
- Time Event (Scheduling Operation)
- Functions for Pumps (Soft-fill, etc.)
- Various ship certification
(ABS, BV, CCS, DNV/GL, KR, LR, NK, RINA, RS)
- Heatsink out the back (110~500kW)

Output Ratings

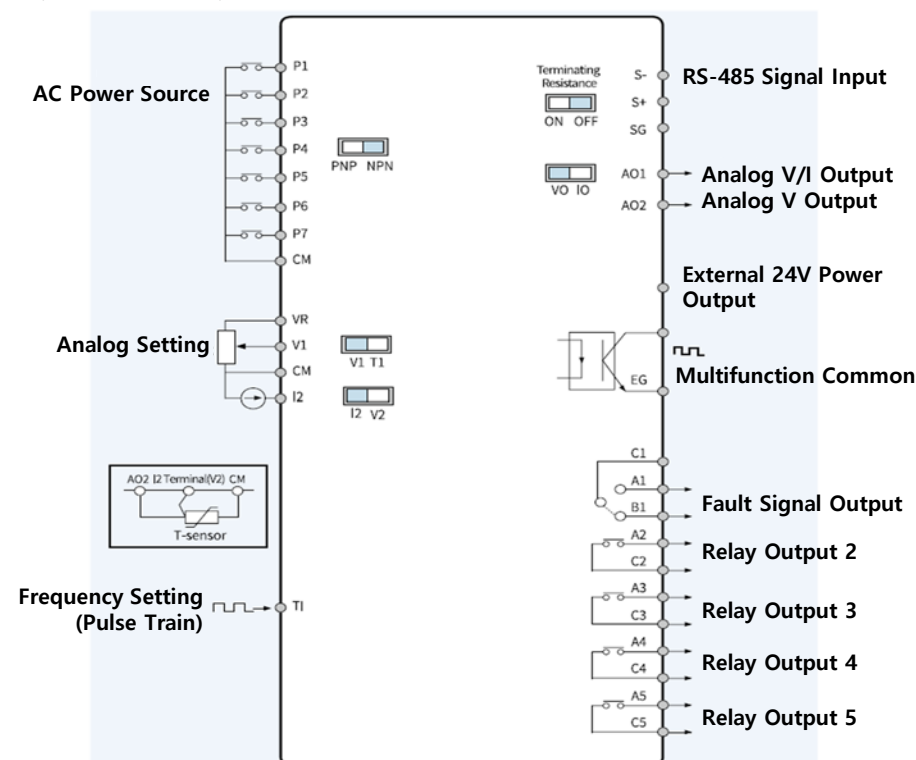
- HD 150% of Rated Current/1min
- ND 120% of Rated Current/1min
(110%/1min for some capacity)

Options

- Flange option
- Extension IO module
- Conduit kit (UL Open)
- Fieldbus
 - RAPIEnet+*, Ethernet/IP, Modbus-TCP, LonWorks
 - BACnet-IP,



Wirings

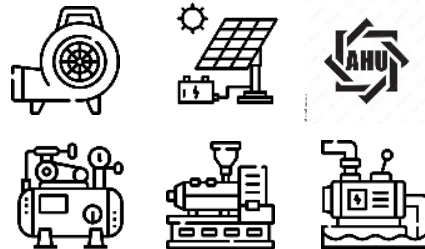


H100 Series

Applications

Applications

- Pump control for Utility facilities
- Turbo compressors
- Extruders
- Chillers
- Solar pumps
- Air Handling Units
- Oil&Gas Pumps



Customized OS

- PM Motor control for Turbo Blowers
- Functions for Extruders
- Functions for Solar pumps
- Advanced function for H100+
- Functions for irrigation pumps

Certification



LS Mtron Extruders



Chillers



HB Oil & Gas Pumps



Air Handling Units



Turbo Compressors

L100 Series

Specification

Capacity Range

- 3-phase 380~480V 5.5~22kW (8~30HP)

Product Features

- V/F, Slip Compensation, Sensorless Vector
- Built-in C2 EMC Filter
- Built-in Dynamic Braking Unit
- Built-in CAN2.0B, RS-232C
- Built-in Safety (SIL2)
- IM Motor Control (VF, Sensored Vector, Slip)
- PM Motor Control (Sensored Vector)
- Support various encoders
 - : Incremental Encoder
 - : Heidenhain EnDat V2.2 (ECN413, ECN1313, ERN487, ERN1387)
- Optimal speed pattern generation (No Creep)
- Geared/Gearless E/L Control
- Battery operation in case of power failure

Output Ratings

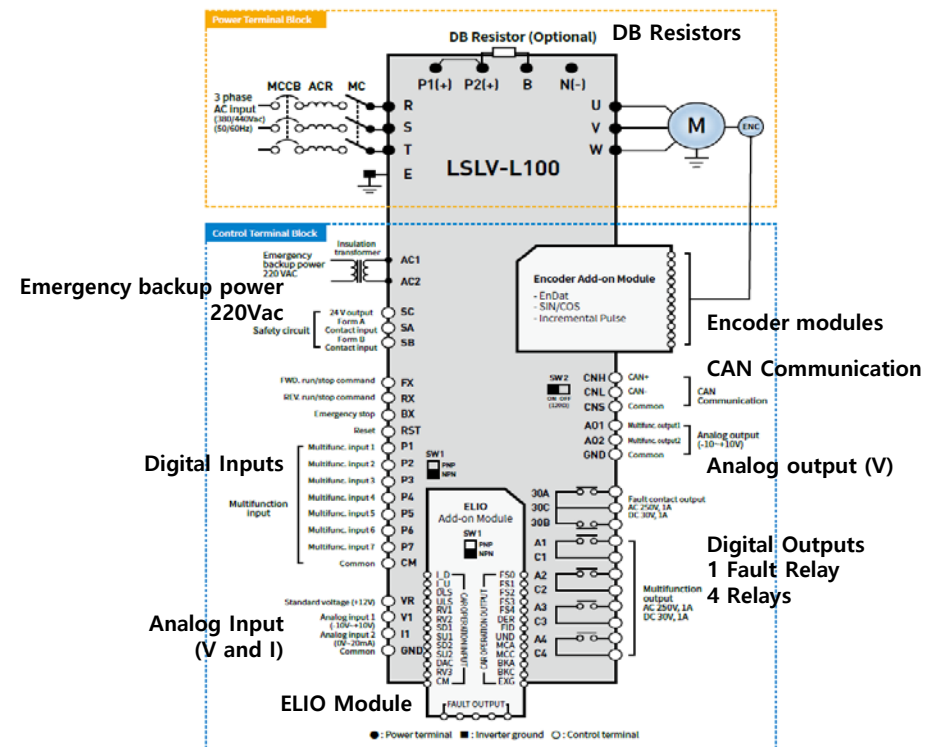
- HD 150% of Rated Current/1min

Options

- Incremental Encoder
- EnDat Encoder
- SIN/COS Encoder
- Elevator I/O (ELIO)



Wirings



L100 Series

Applications

Applications

- Elevators and lifts



E/L for people



E/L for clean room



Cargo Lift

Certification



Automotive Lift



Escalators



Mini E/L



SS Pyeongtaek Campus
(S.Korea)



Nuclear Power Plant
(S.Korea)



Subway Station
(S.Korea)



SK Office
(S.Korea)



SS Pjt. Site (Philippines)



Leninsky (Russia)



Medical Center (Thai)



SS Deli Factory (India)

IS7 Series

Specification

Capacity Range

- 3-phase 200~230V 0.75~75kW (1~100HP)
- 3-phase 380~480V 0.75~375kW (1~600HP)
- IP54 Available 0.75~22kW (200V/400V)

Product Features

- V/F, Sensorless Vector, Sensored Vector
- Built-in C2/C3 EMC Filter
- Built-in Dynamic Braking Unit
- PM Motor Control (SL Vector)
- Positioning Control
- Synchronous Control
- Block type PLC module as optional
- Safety Torque Off module as optional
- WEB Control (Winders)

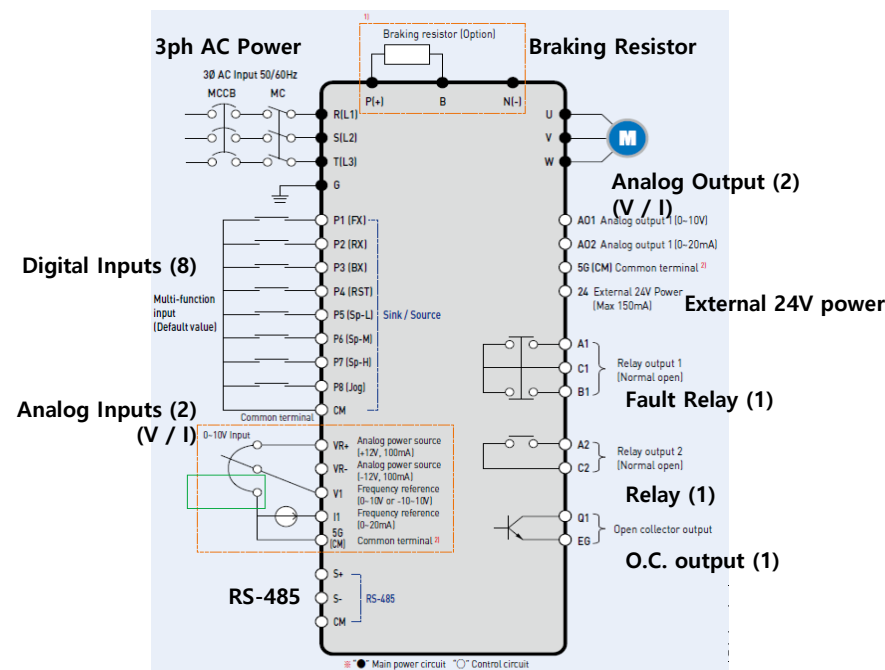
Output Ratings

- HD 150% of Rated Current/1min
- ND 110% of Rated Current/1min

Options

- Slot #1 for Fieldbus
Profibus-DP, DeviceNet, CANopen
Ethernet-IP, Modbus-TCP, CC-link(IE)
LonWorks, PROFINet, RAPIEnet+
- Slot #2 for Small PLC, Ext.IO, etc.
- Slot #3 for Encoder modules
- Slot #4 for Basic/Isolation IO

Wirings



Conduit & Flange

S300 Series

New & Premium Drive

Capacity Range

- 3-phase 200~240V 0.4~75kW
- 3-phase 380~480V 0.4~220kW
(xx – 220 kW available soon)

Product Features

- V/F, Sensorless Vector, Sensored Vector
- PM Motor Control (Scalar, SL Vector, Vector)
- Synchronous Reluctance Motor Control (SynRM)
- Built-in C3 EMC Filter (C2 External option)
- Built-in Dynamic Braking Unit (~37kW)
- Built-in Positioning / Synchronous Control
- Safety Torque Off (SIL2)
- USB-C port for S/W update
- Smart LCD Operation (SLO)
- 2nd Motor Control
(IM/PM SL Vector, Auto Tuning, etc.)
- Advanced User Sequence control
- Advanced PID control (Anti-wind up, Ext. PID, etc.)
- Diagnosis (Main&aux. fans, Relay, Capacitors)
- Adjustable PWM Control (Normal/2phz)

Output Ratings

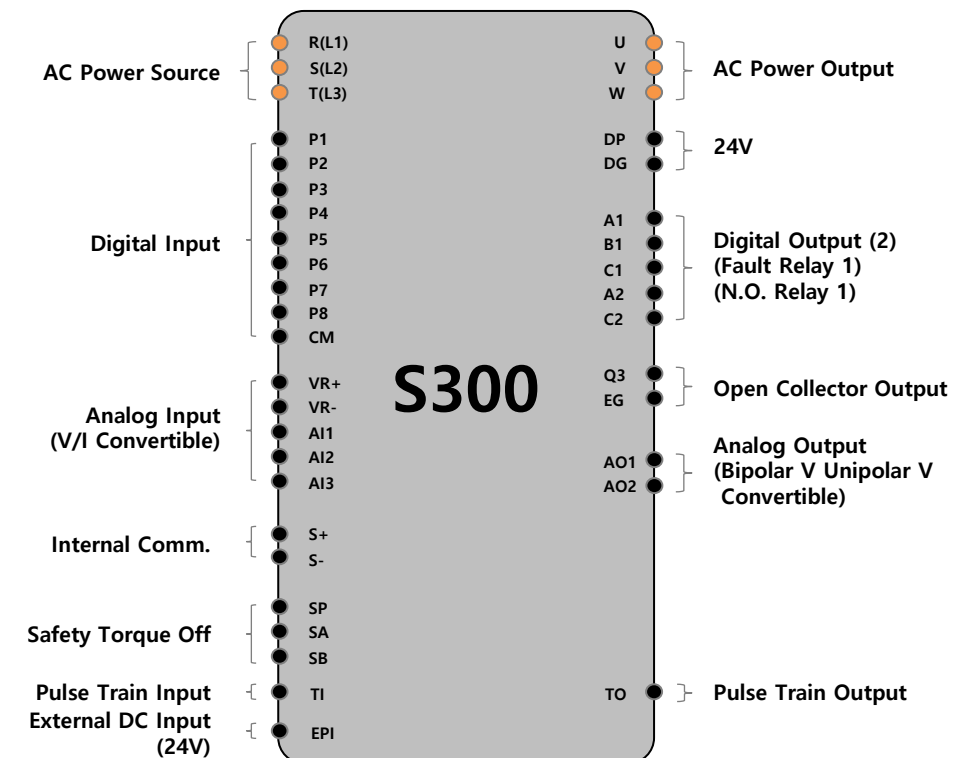
- HD 150% of Rated Current/1min
- ND 120% of Rated Current/1min
(110%/1min for some capacity)

Options

- Fieldbus RAPIenet+: Profinet, Ethernet-IP, Modbus-TCP
Web-server
- Encoder module (L.D. / O.C.)
- Extension I/O



Wirings

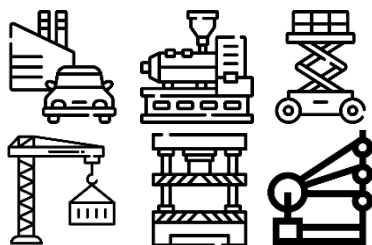


S300 / IS7 Series

Applications

Applications

- Tenter Machines
- Elevators & lifts
- Winders
- Cranes
- Press
- Automotive
- Extruders & Compressors
- Fan & Pumps
- Industrial Washing Machines



HS Tire Steel-cord



E1 Seaport Crane



HD Automotive Lift



Warehouse Lift

Certification



HX Washing Machines



Continuous Wire Drawing



Wet type Wire Drawing



SP Mechanical Press



EH Tenter Machine

Softstarter Series

Specification

Capacity Range

- SSCe & SSCi 18~200A
- SSMe & SSMi 24~1250A

Product Features

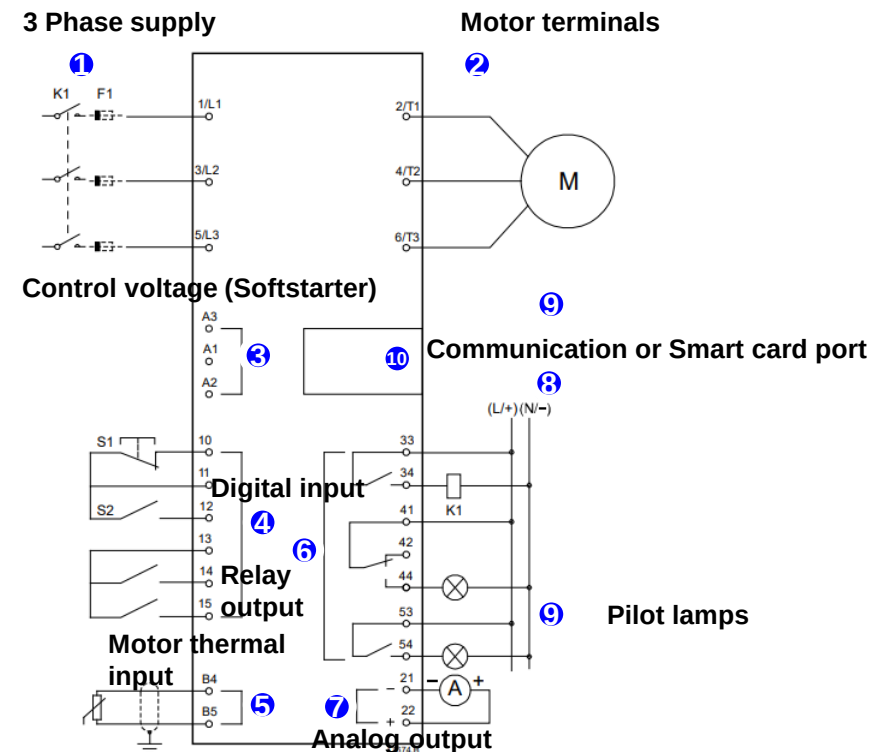
- Built-in By-pass contactors
- Built-in Motor protection
- 2phase/3phase Control
- Start & Stop Ramp
- Intuitive user keypad
- Simple configuration (Macro)
- Data back-up with USB
- Emergency Run (Fire mode)
- Timers and calendars (Schedule operation)
- Pump Clean



Options

- Remote Keypad
- Fieldbus Modules
(Ethernet-IP, Modbus-TCP, DeviceNet
PROFINet, Profibus-DP, Modbus-RTU)

Wirings



Main Customers & References

Electronics & Semiconductor



Automotive



Food & Beverage



Heavy industry



Infrastructures



Global product partner





LS ELECTRIC

FUTURING SMART ENERGY



Thank You!